

Clearance Record
DOCUMENT COMMENT LOG

Originating Office: AIR-132	Document Description: Division Review PROPOSED TSO-C159b	Project Lead/Reviewer Dave Robinson	Reviewing Office: FAA/ACO Field Offices	Date of Review: 10 July 2014
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Commenter	Page & Paragraph	Comment	Reason for Comment	Suggested Change	Comment Resolution
ACE111	Page 2, Table 3-1	Minor change Fourth column in description has “4 AES” needs to be “AES4”	To be consistent	Change 4 AES to AES4	Concur, change made.
ACE111	Page 2, Table 3-2	AES 6 needs to be AES6	To be consistent	Change AES 6 to AES6	Concur, change made.
ACE-117C, John Raspanti, 847-294-7379	Pg 3, para 3.b.	Grammar	Readability	Add comma between “long range communication services (LCR)” and “aeronautical mobile satellite ...”	Concur, change made.
ACE-114	Page 4	Add a paragraph for Electronic Hardware Qualification.	Provide the guidance for equipment that includes complex airborne electronic hardware.	Add a paragraph for it.	Concur, change made.
ACE-114	Page 6 Section 5 APPLICATION DATA REQUIREMENT S	Add data requirements for complex custom airborne electronic hardware if it is included in the article.	Be consistent on application data requirements	Add a paragraph for application data requirements for complex custom airborne electronic hardware after 5.c.	Nonconcur, per latest TSO template section 3.c Failure Condition and 3.f note which excludes minor condition classification and therefore no Electronic Hardware Qualification is required. <i>{Use this paragraph if the condition classification</i>

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					<i>(defined in paragraph 3.b of this TSO) is major, hazardous or catastrophic.}</i>
ACE-114	Page 8 Section 6 MANUFACTURER DATA REQUIREMENTS	Add data requirements for complex custom airborne electronic hardware if it is included in the article.	Be consistent on manufacturer data requirements	Add a paragraph for manufacturer data requirements for complex custom airborne electronic hardware after 6.g.	Nonconcur, per latest TSO template section 3.c Failure Condition and 3.f note which excludes minor condition classification and therefore no Electronic Hardware Qualification is required. <i>{Use this paragraph if the condition classification (defined in paragraph 3.b of this TSO) is major, hazardous or catastrophic.}</i>
ACE111	Overall comment	This is a positive change to the TSO; expanding the TSO into classes			
ACE-117C, John Raspanti, 847-294-7379		Since we did not have access to a draft of RTCA/DO-262B, it was not possible to verify any information associated with this reference.			Provided MOPS to John Raspanti.

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ANM-130L	Page 1 Paragraph 2.b & 3	2.b “ NGSS equipment approved under previous versions of this TSOA may still be manufactured under the provisions of their original approval.” Conflicts with Par. 3 “.. NGSS equipment identified and manufactured on or after the effective date of this TSO must meet the MPS qualification and documentation requirements in RTCA, Inc. document RTCA/DO-262B, <i>Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS)</i> , dated June XX, 2014. “	Conflicting direction.		Nonconcur, language here is per latest TSO template. No change required.

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ANM-130L	Page 3 Paragraph 3.b.2 and page 4 Paragraph 3.C	The information appears to be redundant between the two paragraphs.	Readability	Change as follows, Par 3.b.2 revise to read “NGSS equipment is intended for procedural airspace area operations.” Par 3.c Added the following “Develop the system to, at least, the design assurance level equal to this failure condition classification. Use of NGSS equipment in other operating environments (for example, high-density terminal/en route domestic airspace) may impact equipment performance and safety considerations.”	Concur – change made.
ANM-130L	Page 4 Paragraph 3.e. Note	Paragraph 3(e) for environmental qualification requires specific compliance section to DO-262B, section 2.3 (DO-160G). However, the note says the use of DO-160D (change 1 and 2) or earlier versions will require deviation. So it appears DO-160E and DO-160F will not require deviations.	A deviation would still be required this adds no value.	Delete Note and add a requirement for appropriate 160D level or later to supersede the MPOPS.	Nonconcur, the language is per latest template. No change required
ANM-130L	Page 4 Paragraph 3f	Add wording to allow DO-178C.	DO-178C is an acceptable standard to the FAA and industry is moving to 178C. If no allowance is made for DO-178C then we will have to process deviations.	Add wording to allow DO-178C.	Concur, change made.

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Tony Pigott	Page 4 & Paragraph e	Environmental Qualification MPS is incorrect.	The corrected MPS is RTCA/DO-160G, as supported by Page 7 & paragraph 5.a.(5).	Replace all existing text with RTCA/DO-160G.	Nonconcur, the language is per latest template. No change required
Tony Pigott	Page 4 & Paragraph f	Software Qualification MPS is incorrect.	The corrected MPS is RTCA/DO-178C, as recognized by FAA AC 20-115C.	Replace RTCA/DO-178B with RTCA/DO-178C or reference AC 20-115 for guidance on the use of various versions of DO-178.	Concur, change made
Tony Pigott	Page 4 & Paragraph f	No airborne electronic hardware qualification MPS is provided.	Simple and/or complex devices will be used in design, as supported by Page 7 & paragraph 5.a.(4)(b).	Add airborne electronic hardware qualification per RTCA/DO-254.	Nonconcur, per latest TSO template section 3.c Failure Condition and 3.f note which excludes minor condition classification and therefore no Electronic Hardware Qualification is required. <i>{Use this paragraph if the condition classification (defined in paragraph 3.b of this TSO) is major, hazardous or catastrophic.}</i>
Tony Pigott	Page 5 & Paragraph 4.b.(3)	No need to be marked on a major component.	A typical data plate dimension cannot accommodate.	Add the option of 'See IM'.	Nonconcur, the marking is required on all components as described in section 4. No change required

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B. Verna (AFS-360)	Page 1, para. 3	Inconsistent language from that in section 2, paragraphs a. and b. “NGSS equipment identified and manufactured on or after the effective date of this TSO must meet the MPS qualification and documentation requirements in RTCA, Inc. document RTCA/DO-262B...”	New GNSS equipment models can still receive TSO authorization under TSO_C159a up to 18 months after TSO-C159b is published. AND Newly manufactured GNSS equipment under an existing TSO authorization can still be manufactured to the older standard.	Section 3 language must apply to “new models of NGSS equipment,” or more specifically, “NGSS equipment TSO-C159b applications.”	Nonconcur, the language is per latest template. No change required